CLAIMS

We claim:

1. A method of isolating, from a mixture of proteins, a subpopulation consisting essentially of proteins that engage in protein-protein interactions, comprising:

(a) contacting the mixture with a chemically reactive support under conditions that permit
(i) covalent binding of proteins to the support, and
(ii) protein-protein interactions;

(b) permitting proteins in the mixture to become covalently bound to the support;

(c) separation of the support from any proteins not bound thereto;

(d) subjecting the support to conditions that disrupt protein-protein interactions; and

(e) separating the support from any proteins not bound thereto.

2. The method of claim 1, wherein the chemically reactive support comprises chemically reactive moieties selected from the group consisting of: cyanate groups, isocyanate groups, isothiocyanate groups, activated carboxyl groups, activated sulfonyl groups, aldehyde groups, epoxide groups, and thiol groups.

3. The method of claim 2, wherein the chemically reactive support comprises cyanate groups.

4. The method according to any one of claims 1-3, wherein the support comprises an optionally cross-linked polymer or gel.

5. The method of claim 4, wherein the support comprises a material selected from the group consisting of polystyrene, agar, agarose, polyacrylamide, dextran, hydroxylated vinyl polymers, and carboxylated vinyl polymers.

6. The method of claim 5, wherein the support comprises agarose.

7. In a method for analyzing a mixture of proteins, which comprises contacting said mixture with an array of immobilized proteins, the improvement which consists of isolating, from said mixture of proteins, a subpopulation consisting essentially of proteins that engage in protein-protein interactions, and subsequently contacting said subpopulation with said array, wherein the method of isolating the subpopulation comprises:

(a) contacting the mixture with a chemically reactive support under conditions that permit
   (i) covalent binding of proteins to the support, and
   (ii) protein-protein interactions;

(b) permitting proteins in the mixture to become covalently bound to the support;

(c) separation of the support from any proteins not bound thereto;

(d) subjecting the support to conditions that disrupt protein-protein interactions; and

(e) separating the support from any proteins not bound thereto.